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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/717,912 | 11/21/2003 | Leo M. Rozmaryn | 111190.121US1 | 7375 |

24395 7590 05/19/2005

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EXAMINER

THOMPSON, JEWEL VERGIE

ART UNIT PAPER NUMBER

2855

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

ASW

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/717,912 | Applicant(s) ROZMARYN, LEO M. | |
| | Examiner Jewel V. Thompson | Art Unit 2855 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 6 and 8-26 is/are rejected.
- 7) ☒ Claim(s) 2-4 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 8-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Boatright et al (5,471,996).

Regarding claims 1, 10, 11, 15, 21 and 24 Boatright et al teaches a system for measuring muscle strength of a human thumb (col. 1, lines 7-10), comprising: a first structure (20) contacting at least a portion of a back side of the hand (fig. 4); a second structure (74) contacting at least a portion of a palm of the hand, the first and second structures configured to adjustable secure the hand in a substantially fixed position (col. 7, lines 5-16); a ring (32) for receiving a thumb; a load cell (66) comprising electronics to record a force generated by the thumb; and a mechanical assembly linking the ring and the load cell to transmit the forces from the ring to the load cell (col. 6, lines 36-37 and lines 45-58 and fig. 4).

Regarding claim 5, Boatright et al teaches the second structure is in a substantially fixed position (fig. 1).

Regarding claim 8, 19 Boatright et al teaches the electronics provides the capability to at least one of a) display and record forces in at least one of metric and English units; b) display and record a peak force; c) continuously display and record forces generated by the thumb; and d) reset the system prior to a next exertion of force by the thumb (col. 9, lines 29-31)

Regarding claim 9 and 20 Boatright et al teaches a connection (112) whereby data recorded by the system can be transmitted to a computing device

Regarding claim 12, Boatright et al teaches a system for measuring muscle strength of a human thumb (col. 1, lines 7-10), comprising: a clamping apparatus (77) to adjustably secure a hand in a substantially fixed position; a structure (32) for receiving a thumb of the hand while the hand is in the substantially fixed position; a force measuring device (70) to record a force generated by the thumb in at least one of abduction and adduction directions; and a mechanical assembly transmitting the force generated by the thumb to the force measuring device (col. 6, lines 36-37 and lines 45-58 and fig. 4).

Regarding claim 13, Boatright et al teaches the force-measuring device continuously records forces generated by the thumb over a finite period of time (col. 6, lines 45-58).

Regarding claim 14, 18, Boatright et al teaches the structure is adjustable with respect to the hand when the hand is in the substantially fixed position (col. 3, lines 61-64).

Regarding claim 16, Boatright teaches electronics (18) to record the force generated by the thumb; and providing a mechanical assembly (46) linking the structure to the electronics to transmit the force from the structure to the electronics.

Regarding claim 17, Boatright et al teaches the thumb can move in at least a first direction and a substantially opposing second direction (fig. 3).

Regarding claim 22 and 25, Boatright teaches a quantitative measure of forces generated in pure palmar thumb adduction and abduction to serve as an adjunct to grip and pinch strength in the following conditions; osteo-arthritis pre-operation and post-operation; rheumatoid arthritis pre-operation and post-operation; thumb reconstruction after trauma; reconstruction of congenital differences; following tendon transfer surgery; and/or following tumor resection and reconstruction (col. 1, lines 63-col. 2, lines 1-15)

Regarding claim 23 and 26, Boatright teaches the system significantly, substantially and/or completely isolates one or more muscles that are enervated by the motor branch of the median nerve or terminal motor branches of the ulnar nerve (fig. 3).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boatright et al

Regarding claim 6, Boatright et al fails to explicitly teach the first structure is movable to secure the hand in the substantially fixed position. It would have been obvious to one of ordinary skill in the art at the time that the invention was made to have made the first structure movable, since it has been held that the provision of adjustability, where needed, involves only routine skill in the art. In re Stevens, 101 USPQ 284 (CCPA 1954). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to have made the first structure of Boatright et al movable for the purpose to allowing the apparatus to adjust so that any size hand can fit into the apparatus for a thumb strength measurement.

Allowable Subject Matter

3. Claims 2-4 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that cited reference does not teach the hand is secured in a substantially fixed position as part of the measuring of the muscle strength of the human thumb.

Examiner disagrees. The newly cited reference does teach the hand is secured in a substantially fixed position as part of the measuring of the muscle strength of the human thumb as outlined in the present Office Action.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

4,774,966 Lemmen teaches a device for measuring muscular strength of the hand including the thumb

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jewel V. Thompson whose telephone number is 571-272-2189. The examiner can normally be reached on 7-4:30, off alternate Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jewel V. Thompson

Jvt

May 13, 2005

Edward Lefkowitz
EDWARD LEFKOWITZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in this application:

Listing of Claims:

What is claimed is:

1. (Currently Presented) A system for measuring muscle strength of a human thumb, comprising:

(20)
a first structure contacting at least a portion of a back side of the hand;

(14)
a second structure contacting at least a portion of a palm of the hand, said first and

second structures configured to adjustably secure the hand in a substantially

fixed position; (col 7, lines 5 - 25 & fig 1)

(32)
a ring for receiving a thumb;

(66)
a load cell comprising electronics to record a force generated by the thumb; and

a mechanical assembly linking said ring and said load cell to transmit the forces

from said ring to said load cell. col 6, lines 45 - 58 & fig 4

no
2. (Previously Presented) The system according to claim 1 wherein said mechanical assembly comprises a threaded shaft and a nut, and said ring is configured to transmit the force generated by the thumb to said threaded shaft and said nut.

no
3. (Previously Presented) The system according to claim 2, wherein said mechanical assembly further comprises a beam positioned substantially perpendicular to said threaded shaft, said beam transmitting the load from said threaded shaft to said load cell.

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no 4. (Previously Presented) The system according to claim 2, further comprising a knob for rotating said threaded shaft to adjust the position of said nut on said threaded shaft.

5. (Previously Presented) The system according to claim 1, wherein said second structure is in a substantially fixed position. fig 1

103 6. (Previously Presented) The system according to claim 1, wherein said first structure is movable to secure the hand in the substantially fixed position.

fig 1 7. (Currently Presented) The system according to claim 1, further comprising:

a push plate;

at least one push rod contacting said push plate and said first structure;

a bolt secured to said first structure; and

a handle threaded to negotiate said bolt, wherein upon rotating said handle in a first direction, said push plate, said at least one push rod and said second structure move in a direction to adjustably secure the hand in the substantially ~~fixed~~ fixed position.

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8. (Previously Presented) The system according to claim 1, wherein said electronics provides the capability to at least one of: a) display and record forces in at least one of metric and English units; b) display and record a peak force; c) continuously display and record forces generated by the thumb; and d) reset the system prior to a next exertion of force by the thumb. (col 9, lines 29-31)

?? 9. (Previously Presented) The system according to claim 1, further comprising a connection whereby data recorded by said system can be transmitted to a computing device.

10. (Currently Presented) A system for measuring muscle strength of the human thumb, comprising:

means for contacting at least a portion of a back side of the hand;

means for contacting at least a portion of a palm of the hand, at least one of said

means for contacting the back side and said means for contacting the palm


configured to adjustably secure the hand in a substantially fixed position;

means for receiving a thumb;

means for recording a force generated by the thumb; and

means for linking said ring and said load cell to transmit the force from said ring to said load cell.

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 11. (Previously Presented) A system for measuring muscle strength of the human thumb, comprising:

- a first plate contacting at least a portion of a back side of the hand;
- a second plate contacting at least a portion of a palm of the hand, said first and second plates configured to secure the hand in a substantially fixed position;
- a ring for receiving a thumb of the hand;
- a load cell comprising electronics to record a force generated by the thumb; and
- a mechanical assembly linking said ring and said load cell to transmit the force from said ring to said load cell.

12. (Currently Presented) A system for measuring muscle strength of a human thumb, comprising:

- a clamping apparatus to adjustably secure a hand in a substantially fixed position;
- a structure for receiving a thumb of the hand while the hand is in the substantially fixed position;
- a force measuring device to record a force generated by the thumb in at least one of abduction and adduction directions; and
- a mechanical assembly transmitting the force generated by the thumb to said force measuring device.

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13. (Previously Presented) The system according to claim 12, wherein said force measuring device continuously records forces generated by the thumb over a finite period of time.

14. (Previously Presented) The system according to claim 12, wherein said structure is adjustable with respect to the hand when the hand is in the substantially fixed position.

15. (Currently Presented) A method for measuring muscle strength of a human thumb, comprising:

adjustably securing a hand in a substantially fixed position:

placing a thumb of the hand in a structure that enables the thumb to generate a

measurable force in at least one of the abduction and adduction directions; and
recording the force.

16. (Previously Presented) The method according to claim 15, further comprising:
providing electronics to record the force generated by the thumb; and
providing a mechanical assembly linking the structure to the electronics to transmit
the force from the structure to the electronics.

17. (Previously Presented) The method according to claim 15, wherein the thumb can move in at least a first direction and a substantially opposing second direction.

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18. (Previously Presented) The method according to claim 15, further comprising the step of adjusting the position of at least a portion of the structure with respect to the hand.

19. (Previously Presented) The method according to claim 15, further comprising the step of at least one of:

- a) displaying the force in at least one of metric and English units;
- b) displaying and recording a peak force generated by the thumb; and
- c) continuously displaying and recording forces generated by the thumb.

20. (Previously Presented) The method according to claim 15, wherein the force is recorded by a first system, and further comprising the step of:

transmitting the recorded force to a second system.

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21. (Currently Presented) A system for measuring muscle strength of a thumb or a finger of a hand, comprising:

- a securing apparatus to adjustably secure a hand in a substantially fixed position;
- a structure, connected to said securing apparatus, to receive the thumb or finger of the hand while the hand is in the substantially fixed position via said securing apparatus;
- a force measuring and recording device, responsively connected to said structure, to measure at least one force generated by the thumb or finger in said structure in at least one of abduction and adduction directions, and record the at least one force to be used in at least one of diagnostic and therapeutic treatment of the thumb or finger.

22. (Previously Presented) The system according to claim 21, wherein a quantitative measure of forces generated in pure palmar thumb adduction and abduction to serve as an adjunct to grip and pinch strength in the following conditions:

- osteo-arthritis pre-operation and post-operation;
- rheumatoid arthritis pre-operation and post-operation;
- thumb reconstruction after trauma;
- reconstruction of congenital differences;
- following tendon transfer surgery; and/or
- following tumor resection and reconstruction.

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23. (Previously Presented) The system according to claim 21, wherein said system significantly, substantially and/or completely isolates one or more muscles that are enervated by the motor branch of the median nerve or terminal motor branches of the ulnar nerve.

24. (Currently Presented) A method of measuring muscle strength of a thumb or a finger of a hand, comprising at least one of the sequential, non-sequential and sequence independent steps of:

adjustably securing the hand in a substantially fixed position;

receiving the thumb or the finger of the hand in a force measuring device;

measuring the force generated by the thumb or the finger in at least one of the

abduction and adduction directions; and

transmitting the force generated by the thumb or the finger to be used in at least one

of diagnostic and therapeutic treatment of the thumb or finger.

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25. (Previously Presented) The method according to claim 24, wherein a quantitative measure of forces generated in pure palmar thumb adduction and abduction serve as an adjunct to grip and pinch strength in the following conditions:

- osteo-arthritis pre-operation and post-operation;
- rheumatoid arthritis pre-operation and post-operation;
- thumb reconstruction after trauma;
- reconstruction of congenital differences;
- following tendon transfer surgery; and/or
- following tumor resection and reconstruction.

26. (Previously Presented) The method according to claim 24, wherein one or more muscles that are enervated by the motor branch of the median nerve are significantly, substantially and/or completely isolated.